

QUICK BUILDS FOR BETTER STREETS: A NEW PROJECT DELIVERY MODEL FOR U.S. CITIES



peopleforbikes



*Prospect Park West, New York City, Built in 2010.
Photo Credit: New York City Department of Transportation*



I-405, Los Angeles, CA. Built in 1961. Photo Credit: Prayitno

INTRODUCTION: THINKING BIG BY WORKING SMALL

The problems modern city streets face are as huge as ever. But these days, many of the best solutions are small.

You can't tweak a freeway. But a public plaza, a protected bike lane, a dedicated bus lane: these features of modern cities, unlike the projects we built two generations ago, can be made quickly and adjusted fast.

So maybe it's no surprise that, in the last decade, some U.S. cities have been creating new models for project delivery and implementation that rethink the bureaucratic processes developed during the freeway era.

By rethinking the purpose of streets, U.S. municipalities are delivering improved safety, better economic performance, new transportation choices and a higher quality of life. They are doing so with new techniques that realign and reassign space on streets using paint and simple physical objects that can be cheaply purchased and quickly installed. Using these rapid implementation methods over the last several years, cities are creating heavily used bike networks, popular

new public spaces and demonstrably safer streets for walking, biking and driving.

For organizations as big and complicated as local governments, creating a new process or procedure is difficult. But if you do it right, it can be revolutionary.

This report draws on the experiences of Austin, Chicago, Denver, Memphis, New York, Pittsburgh, San Francisco and Seattle to create a general guide for adding this exciting, effective new form of project delivery into your city's toolbox.

ABOUT THIS REPORT

This is one of a series of short, practical reports from PeopleForBikes' Green Lane Project, which helps cities build protected bike lanes so they can connect neighborhoods with low-stress biking networks. It was researched and written by Jon Orcutt with support from Michael Andersen and the Green Lane Project team, drawing on the experiences of the Green Lane Project's first four years.

Cover image: The Lincoln Hub in Chicago, IL. Built in 2015. Photo Credit: John Greenfield.

WHAT IS A QUICK-BUILD PROJECT?



TACTICAL URBANISM: THE SPECTRUM OF CHANGE

THE NEW, RICH SPECTRUM OF PROJECT DELIVERY

Quick-build project delivery is part of a new set of ideas sometimes referred to as “tactical urbanism.” In their 2015 book *Tactical Urbanism: Short-Term Action for Long-Term Change*, Mike Lydon and Anthony Garcia describe a spectrum of ways that streets can change, ranging from the most temporary changes to the most permanent ones.

Quick-build projects fall on the middle parts of this spectrum. Like larger capital projects (which are mostly asphalt and concrete), quick-build projects are meant to be used by the public for years. But many other things about them—materials, process, funding—are new and developing rapidly. As discussed in this report,

A QUICK-BUILD STREET PROJECT IS:

- » Led by a city government or other public agency.
- » Installed roughly within a year of the start of planning.
- » Planned with the expectation that it may undergo change after installation.
- » Built using materials that allow such changes.

Demonstration Photo Credit: Bike Denver; Pilot Project Photo Credit: John Paul Shaffer; Permanent Installation Photo Credit: Sergio Ruiz

EVERY QUICK-BUILD STREET PROJECT NEEDS THESE NINE THINGS:



A TEAM

We recommend that any agency pursuing quick-build projects designate at least one specialist to be involved with every such project. In addition, these projects require buy-in from engaged politicians or top executives; nimble and creative designers; money handlers, both in budgeting and procurement; and communications and outreach pros.



A CONTRACTING PLAN

Quick-build jobs are rarely compatible with full bid cycles. Cities need either on-call contracts or in-house crews.



AN OUTREACH GAME PLAN

With these projects, installation comes in the middle of the public outreach process, not near the end.



A SYSTEM FOR SEIZING OPPORTUNITY

When opportunities knock, cities will fail to take advantage of them unless there is a process in place that can swing rapidly into action and put a project atop the priority list.



SPECIALIZED COMMUNICATIONS

Alongside its direct outreach, a quick-build project needs language and images that help the public understand that it's a way to improve public involvement, not circumvent it.



INSTITUTIONALIZED URGENCY

Installation deadlines are mandatory, whether dictated by the first big snowfall of winter, by a repaving schedule or by a mayoral pledge.



A MAINTENANCE PLAN

Replacing torn posts, repainting colored pavement and clearing paths of snow or debris won't break your bank, but they do require time, money and equipment.



A RELIABLE FUNDING STRATEGY

Most state and federal grants are designed around the capital-project model. Quick-build work requires different tricks.



MEASUREMENT

Objective metrics are an essential part of the process, both for making necessary adjustments and ultimately for demonstrating success.

The following pages explore each of these in more detail.

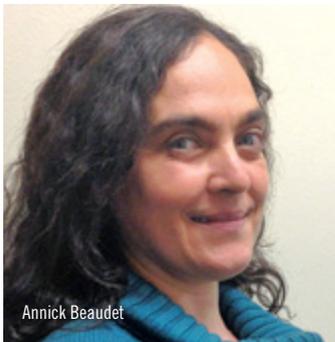


A TEAM

We recommend that any agency pursuing quick-build projects designate at least one specialist to be involved with every such project. In addition, these projects require buy-in from engaged politicians and their appointed executives; nimble and creative engineers; money handlers, both in budgeting and procurement; and communications and outreach pros.

Though quick-build projects are often related to biking, a quick-build project delivery team isn't united around the goal of improving biking per se. Instead, a great team should be united across disciplines in their enthusiasm for creative, human-scale uses of public space.

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Annick Beaudet

“You don't need new resources,” said Annick Beaudet, who helped Austin create a quick-build system while serving as its bicycle program manager and now serves as its Transportation System Development Division

Manager. “It's utilizing your existing resources toward rapid implementation in a new way.”

Where should the team exist within a city's bureaucracy? This is an important decision, not so much because the *right* choice must be made, but simply because a choice must be made.

Pragmatism should be the rule. No two city governments function in precisely the same way, but the quick-build approach to urban transportation is proving to be easily adaptable and highly usable in a variety of city scales.

In larger cities like New York, Chicago and Seattle, quick-build project duties are assigned to established units of transportation departments. Operational divisions responsible for traffic engineering, signals and street markings generally plan and implement the street design changes. Often, units directly responsible for cycling and pedestrian projects are responsible for development, outreach and project management.

Seattle's relatively new venture into quick-build projects remains primarily focused on the bike network, which is planned and executed by Seattle DOT's Traffic Division. The department is currently creating a new project development office under Commissioner Scott Kubly which

could integrate and coordinate quick-build and capital project approaches to the city's transportation needs.

The attitude required for quick-build projects may not be compatible with people who specialize in longer-term, expensive capital construction projects. New York, Chicago and

Seattle separate these teams.

New York City's Street Design Manual, for example, makes a clear, intentional distinction. “DOT implements two kinds of projects: ‘Operational’ and ‘Capital.’ Operational projects usually do not involve sub-surface utility work, drainage, or roadway grading...”

In some cities, particularly smaller ones that do not have a “full-service” city DOT or whose transportation department shares responsibilities with a public works department, conceiving and implementing quick-build projects can require more cross-department collaboration.

Quick-build transportation projects are developed and implemented in Pittsburgh by a unique standing working group involving City Hall, the city's planning and public works departments, the county planning department, the company operating the city's new public bike program and the main cycling advocacy organization.



A SYSTEM FOR SEIZING OPPORTUNITY

When opportunities knock, cities will fail to take advantage of them unless there is a process in place that can swing rapidly into action and put a project atop the priority list.

Once in a while, stars align: a community group or business asks for a project that also has support from both city staff and politicians.

Those moments are delicate things, easily suffocated by bureaucracy.

“By no means should a process get in your way when you have a kumbaya of community want, administrative and political support,” said Austin’s Beaudet.

For Memphis, the way to quickly capitalize on “kumbaya” moments has been to take large amounts of the selection process out of the hands of government. Every project in the MEMFix program is selected by a community-based group under contract with the city.

“We’re reacting to what the community perceives to be a problem,” said Kyle Wagenschutz, Memphis’s bicycle and pedestrian coordinator.

Other cities lean more on systems to help prioritize. For traffic calming projects, New York tracks safety data; for bike lanes it balances the network plan against public requests; for plazas it collects and selects applications from local stakeholders.

Whatever the method, the key is to ensure that a person who understands the quick-build process—maybe the city’s designated quick-build specialist, maybe someone else—will hear about potential projects when they arise.

In Memphis, the MEMFix program is led by the city’s Traffic Engineering Department, whose project designers and in-house crews conceive and deliver the projects. The program includes involvement by the Mayor’s Office, the Public Works Department, local non-profit groups and volunteers for some implementation work.

The San Francisco Metropolitan Transit Agency’s Livable Streets unit integrates planning, engineering and budgeting for traffic-calming, bicycling and pedestrian-oriented projects. These include quick-build street geometry changes to large-scale capital projects and an increasing number of hybrid projects that involve both painted geometric changes and robust construction changes. SFMTA Livable Streets installs operational materials such as pavement color or plastic delineators, but relies on the city’s Department of Public Works for concrete pouring and asphalt resurfacing.

However the team of quick-builders is distributed through government, cities agreed that it’s important to name one or more people to specialize in such projects.



Kristen Simpson

“You need a strong project manager who is empowered to remove obstacles and elevate issues quickly,” said Kristen Simpson, the former acting director of Seattle’s project development division.

“If everyone’s doing

their part but no one’s orchestrating them, things can go off track quickly.”

In Austin, Beaudet said, the contract manager and project manager for the city’s on-call contractors serve that function. “They are that vein of comfort and trust where people are like, ‘OK, if this guy says this is what we do, I trust him,’” Beaudet said. “You need someone who can provide normalcy. You need someone who can vouch and say ‘This is a way we do business.’”



Kyle Wagenschutz

SECOND AVENUE SHOWS SEATTLE THAT SPEED IS POSSIBLE

In 2014, Seattle used the simplest possible system for seizing opportunity: an unexpected mayoral mandate.

Though the city had experimented with protected bike lanes a few years earlier, the design was expensive and the implementation slow. Recently elected Mayor Ed Murray felt the city was falling behind in delivering a working bike network and had been slow to address traffic safety problems such as crashes involving people biking on Second Avenue.

So at a breakfast speech on Bike to Work Day in May 2014, Murray announced that Second Avenue would get a protected bike lane in time for the fall launch of Pronto bike sharing.

The declaration accelerated a previously planned project by 18 months. Outreach for the design of a bidirectional protected bike lane on the one-way downtown street began immediately. Additional features, including dedicated bike signal phases at intersections, were added to the plan that summer.

It was a heart-thumping race to the finish for Seattle staffers. In one story that city staff like to tell, the install team ran out of side-mount flanges just before installation weekend. Two signal electricians ended up making an emergency road trip to the nearby city of Everett to look for spare parts that they painted and cut to fit.

The completed Second Avenue opened in September, just four months after the mayor's proclamation. From outreach to installation, the work was carried out exclusively in-house at Seattle DOT. "Biking downtown will never be the same again," declared Seattle Bike Blog.

A week later, the city released bike counts documenting a tripling of bike volumes along the avenue. That success led quickly to additional projects—and a new five-year timetable for building Seattle's entire city center bike network.



Second Avenue, Seattle, WA. Built in 2014.

That person should have a basic “toolkit” in their head of the possible quick-build treatments, from thermoplastic curb extensions to plant-lined plazas to paint-and-posts protected bike lanes.

“You need a system that puts all the opportunities in front of a human,” said Seattle’s Simpson. “They can only review the ones that they see.”



INSTITUTIONALIZED URGENCY

Installation deadlines are mandatory, whether dictated by the first big snowfall of winter, by a repaving schedule or by a mayoral pledge.

Winter cities have an interesting advantage when it comes building quickly: nature's deadline.

"Can Chicago reach 30 miles of 'green lanes' before the snow flies?" asked the blog Grid Chicago in 2012. The city was setting a breakneck pace for building protected and buffered bike lanes after a campaign pledge from Mayor Rahm Emanuel.

Chicago missed that moonshot, but landed among the stars anyway: it was responsible for one-quarter of all the protected bike lanes built in the country that year, a pace that's never been matched since.

Chicago, Pittsburgh, Austin and New York all select and develop projects over the winter for implementation in warmer months. It's such an important part of their quick-build process that cities with fewer weather restrictions might consider other ways to create deadlines that can add more urgency to internal decision-making.

In many cities, the easiest self-imposed deadline for street changes is the repaving schedule. That's certainly the cheapest time to add new crosswalks or bike lane buffers.

In cities with well-established quick-build programs, in fact, the process is reversing: the needs of the biking and walking networks have begun to shape the repaving schedules. This is happening in Austin and New York, especially on larger scale corridor projects that combine walking, busing and biking improvements.

Project delivery is quick enough there that the cities can swap a project off their annual to-do lists, capacity permitting, if physical or political conditions prevent implementation in that season.

Memphis and Seattle use a different system for creating urgency: each year they set a goal for projects to complete. In 2015, Memphis assigned its MEMFix contractor to complete two quick-build projects of any type; Seattle, meanwhile, aimed for seven miles of new buffered or protected bike lanes citywide.

"We always think we're being conservative when we set our goals, and every year it's a scramble," Simpson said. "That really keeps us looking for opportunities."



A RELIABLE FUNDING STRATEGY

Most state and federal grants are designed around the capital-project model. Quick-build work requires different tricks.

As with finding the right way to integrate a quick-build program into the bureaucracy, pragmatism also rules the way a quick-build project fits into a city budget.

Funding for programs across our sample of cities varies greatly, showing how adaptable and evolutionary the practice of quick-build street transformation is.

In most cases, cities lean on local funding to minimize procedure and delay. Even in cities with long experience using federal funds for cycling and pedestrian improvements, the delays in allocating, winning approval and completing all the necessary check-offs can make federal funding a difficult match with quick-build transportation projects.

This is exacerbated where state transportation departments, the custodians of Federal Highway Administration funding, question newer street designs



Lincoln Hub, Chicago, IL. Built in 2015. Photo Credit: John Greenfield

and implementation techniques. In some cases, states control highway routes that double as city streets, adding another possible barrier to redesigns. But it is possible to find state and federal funding for quick-build projects.

In Chicago and New York, where city governments had previously established relatively long cycles of federal funding for bicycle network and some pedestrian-oriented projects, U.S. Congestion Mitigation and Air Quality funds play a substantial role in building protected bicycle lanes. In New York, these resources are supplemented by local funding added to the DOT budget by Mayor Bloomberg's PlaNYC sustainability initiative, and later by some additional operating funds earmarked for Mayor de Blasio's Vision Zero policy. But CMAQ funds can be insecure; at times, public debate over NYC cycling policies and bike lane designs has led to nervousness at the state level, threatening to slow the flow of federal support.

Chicago uses local money to install its quick-build projects, but CMAQ money to plan and engineer them. "Our CMAQ funding is for implementing our Streets for Cycling Plan," said Mike Amsden, assistant director of transportation planning for Chicago. "So we have some flexibility to use that money to design and install a variety of different bike lanes."

Elsewhere, local funding has been the rule. Standing budget line items for street markings, signs and signals contribute to projects that re-make street geometries. City infrastructure bond measures support the quick-build programs in Austin, San Francisco and Seattle. When a Chicago project falls in an urban renewal district, property tax increment financing can chip in.

Pittsburgh's program was unique: it launched with philanthropic funding. The Richard King Mellon Foundation gave grants in the tens of thousands per year for several years to the nonprofit advocacy group



Penn Avenue, Pittsburgh, PA. Built in 2014.

Bike Pittsburgh, which used the money to hire private engineers who designed most of the city's first striped bike lanes.

Pittsburgh then used those plans to install the lanes, often with paint or inlaid tape.

Like most cities, Chicago doesn't yet have a dedicated line item in its local transportation budget for quick-build projects. But it pays for some biking and walking infrastructure in an interesting way: with a portion of the \$2.5 million it receives annually from Blue Cross-Blue Shield as sponsorship of the city-owned Divvy Bike Share system.

"That money goes toward a wide variety of bike-related projects in our budget: everything from printing our bike maps to funding our bike ambassador program," Amsden said. "We also use anywhere from \$200,000 to \$1 million per year for bike lanes and

One key reason quick-build programs have scored local money is that they can deliver improvements quickly: well within a single political term.

pedestrian safety projects. If something comes up that's a \$10,000, \$20,000, \$30,000 project, we can shift money around."

One key reason quick-build programs have scored local money is that they can deliver improvements quickly: well within a single political term. This can be especially useful when local lawmakers influence money spent within their districts.

As they seek to expand programs, Memphis, Austin, Seattle and Pittsburgh anticipate greater use of federal funding and are working with their state counterparts to arrange this support, while recognizing that the procedural delays in using these resources mean that they will be built into future implementation cycles rather than projects on the immediate horizon.



A CONTRACTING PLAN

Quick-build jobs are rarely compatible with traditional bidding processes. Cities need either on-call contracts or in-house crews.

On-call contracts, sometimes referred to by the federal acronym IDIQ for “indefinite delivery/indefinite quantity,” are probably the only form of formal government project procurement compatible with quick-build projects.

“You go through a lot of projects in one big contract,” said Austin’s Beaudet. “Let’s say the contract is \$2 million or \$10 million. You may have an idea of how many projects you want to do; the beauty of it is that it’s flexible.”

Quick-build projects are mostly built of things other than concrete, but a few modest concrete features like pedestrian islands, curbed medians and sidewalk extensions can go a long way to making a redesign work.

Some cities, including New York and San Francisco, have in-house concrete-pouring units. Other cities, including Austin, make sure their contractor has one.

Seattle does most of its work in-house. Its quick-build project managers wrangle time from multitasking street crews.

“Usually we have enough projects in their queue that when we have a higher-priority project we can switch out,” said Simpson. “Or we pay overtime. Or we convince them to do some of our work on straight time and charge somebody else overtime.”

Memphis taps a third source of labor, in addition to contractors and government employees: volunteers. That’s possible because of MEMFix’s community-led structure.

After getting city approval for a project design, MEMFix’s lead contractor Livable Memphis, might ask city crews to do linear lane striping. Meanwhile, Livable Memphis might buy materials (or solicit donations from local businesses) and give them to volunteers to go behind the city crews and fill in features like crosswalks.

“On any MEMFix event, you’re probably seeing a combination of those three,” Wagenschutz said.



Bluebonnet Lane, Austin, TX. Built in 2012.



Arapahoe Street, Denver, CO. Built in 2015.

DENVER IMPROVISES AN IN-HOUSE CONTRACTING PROCESS FOR PROTECTED BIKE LANES

When Denver set out to build a parking-protected bike lane couplet on two miles of downtown streets in 2015, it thought the work would just involve some re-striping.

But to make a quality project, the city realized that more work was needed, from moving parking meters to creating new floating bus stops. As the scope changed, Denver Public Works staff realized that projects like these fall in between the city's usual categories.

"They're too big for in-house capabilities, but not a multi-million-dollar capital project," said Denver Urban Mobility Manager Emily Snyder. "And that's the two worlds right now we live in."

But the lanes were a priority. So, with backing from public works managers, Snyder and her colleagues created one of the most unique project delivery plans in the city's history.



Brittany Price

Brittany Price, assigned as the lead engineer for both projects, tapped experience from her private-sector background to essentially double as the city's in-house general contractor herself.

For concrete and pavement marking, she drew on the city's existing on-call contracts. For signal work and meter relocation, she found in-house staff who don't usually work on bike projects, such as parking meter repair workers, to do that work between their regular tasks.

Two weeks before construction started, Price's team led a huge "all hands on deck" meeting of 40 people representing every team that would be involved. "We spoke to everyone on the phone and were like, 'We really need you there,'" Price said. "I can't stress how important it was to have the management team be supportive and to make that priority one. Otherwise it wouldn't have happened, for sure."

During installation, Price also functioned as the implementation manager. That meant spending about half her day in the field, split between morning and night to answer the questions of workers on both the day and night shifts.

It worked. Mayor Michael Hancock cut the ribbon personally on December 3 ... and promised three more protected bike lanes in 2016. For those, public works is hoping to somehow create a new system that will let them hire external general contractors for jobs under \$1 million or so.

"We're basically working on the best ways to deliver mid-size but complex projects," Snyder said.



AN OUTREACH GAME PLAN

With these projects, installation comes in the middle of the public outreach process, not near the end.

Quick-build projects are tweakable. This means that the initial installation itself is part of the public outreach process. To use language from the software industry, every project is a public beta test.

At best, this makes quick-build projects inherently more effective at public outreach than traditional ones.

Because they change streets rapidly, quick-build projects can help dull the power of “loss aversion,” the natural psychological tendency to value something we have—even if it’s a dangerously wide street—over something unfamiliar. By resetting the “default” status of a street early in the project, quick-build projects can rapidly change conversations about what is possible.

However, quick-build projects do not remove loss aversion. Indeed, many rapid changes can get people’s attention in a way that fewer, slower changes don’t.

The resulting challenges come from two directions:

- » Some people will see quick-build projects as moving too fast, not realizing that the point of flexible materials is to keep adjusting them on the ground.
- » Other people will see quick-build projects as excuses not to invest in permanent change, not realizing that the goal is to eventually upgrade to concrete.

Seattle has faced the first problem. Simpson’s advice is to manage expectations: document that there is in fact a problem that must be solved, and frame the challenge not as “Do you want to do this project?” but rather “How can we best accomplish this goal?”

Austin has faced the second problem. “We have been doing a lot of interim stuff in Austin in the last few years,

and now people are saying, ‘Wait a minute, you’re pulling one over on us,’” said Beaudet. “People really want to make sure we haven’t lost sight of the larger, more permanent projects.”

The truth, of course, is that the city is working hard to finance permanent projects, but that quick-build work is a way to give a street some of the benefits in the meantime.

“By doing these fast interim projects, you get immediate return on investment,” said Beaudet. “Waiting for your big ship to come in, you’ve lost years of quality of life and safety and mobility. That’s the reason to do it. That’s the argument that we make ... We still want the bigger, sexier improvements, but we’re not willing to do nothing waiting for that.”

In addition, Beaudet said it’s useful to get a letter from a top official in which they explicitly promise that interim improvements won’t preclude permanent ones. “That goes a long way,” she said.



Market Street, San Francisco, CA. Built in 2010.



Monroe Avenue and Marshall Avenue, Memphis, TN. Built in 2014. Photo Credit: John Paul Shaffer

MEMPHIS CREATES A ROLLING COMMUNITY FESTIVAL OF STREET REDESIGN

In substance, Memphis' MEMFix program is similar to other cities delivering quick-build street improvements.

But its grassroots origin and abiding participatory nature supports the idea that any jurisdiction that can mark its streets can complete a quick-build project.

In 2010 Memphis citizens petitioned city government to install a new temporary geometry on a disinvested, high-potential commercial street. The volunteer-led effort, initiated by the street's business association, used house paint to mark a protected bike lane and organized a neighborhood festival that recruited retailers from other neighborhoods to open pop-up businesses in vacant storefronts.

It was a big hit with the community, business leaders and biking advocates alike. Soon after being elected, Mayor A C Wharton agreed that the city should promote more such projects. Early efforts became laboratories for testing designs, materials and procedures.

The city gradually institutionalized the process over the next few years, including participating in PeopleForBikes' Green Lane Project for technical assistance, program development and streets guidance. Funding, outreach and implementation materials were all approached pragmatically, using tools at hand. Some materials were donated by businesses and installed by volunteers.

The program has grown to encompass many projects, including traffic safety improvements and public spaces, on a regular implementation cycle. MEMFix neighborhood events are still held at the launch of some projects.

Because the program is initiated and led by community partners, Wagenschutz said it rarely faces much criticism. "There's always a fair amount of sort of buy-in that already exists," he said. "Generally the kinds of improvements we're doing in Memphis all have notable safety benefits to them, and I think that becomes evident."



SPECIALIZED COMMUNICATIONS

Alongside direct outreach to stakeholders, a quick-build project needs consistent language, images and processes that help the public understand that it's a way to improve public involvement, not circumvent it.

Though its direct outreach has been impressively successful, Memphis is among the many cities that have struggled to explain the quick-build philosophy to the public at large.

“We’ve tried sort of everything,” said Wagenschutz. “We’ve done mailing to people in the neighborhood, we’ve done newspaper articles, that kind of stuff. I’m not sure there’s a great method of helping people understand the temporary nature.”

So far, Wagenschutz said, the best move they’ve made has been to simply leave the projects in place for longer: six or 24 months rather than two or three days. Every MEMFix project still kicks off with a community party. The city simply leaves the changes in place afterward. “The transition to having them on the ground longer helps,” Wagenschutz said. “It becomes a more normal part of people’s daily lives.”

Quick-build projects can face the opposite pitfall, too: Being sold as a “pilot” even though a city has no intent to change them.

“You can’t keep calling things a ‘pilot’ and then keep them,” said Pittsburgh Bicycle and Pedestrian Coordinator Kristin Saunders. “People know better ...



Kristin Saunders

If you’re going to call something a pilot, there needs to be a published program for testing something and refining it if necessary and collecting data to tell you if it’s working.”

Many cities have found that each successful quick-build project begets more, future ones. Early success can sell political leadership on the value of the approach and lead to larger programs. San Francisco and Seattle launched their efforts largely on the strength of a single centerpiece project. In New York City, a series of experimental public plazas elsewhere in the city led to the high-profile pedestrianization of Times Square.

In Denver and Memphis, business groups pushing for protected bike lanes found a creative way to shape the public narrative about their city’s first quick-build projects. They organized live street demos and followed up with online crowd funding campaigns that solicited small donations from local companies and residents.

The money raised—\$75,000 in Memphis, \$36,000 in Denver—required substantial staff time from the nonprofits involved, and it wasn’t nearly enough to actually build the projects. Instead, the main benefit was to communicate to the public and to the city government that these projects were coming from the people.

“Now we can say, ‘Remember what happened on Arapahoe Street? We want to do that on Broadway,’” said Aylene McCallum of the Downtown Denver Partnership. “Different strategy: we don’t need you to raise money, but we need you to write a letter to the mayor.”

Many cities have found that each successful quick-build project begets more, future ones.



A MAINTENANCE PLAN

Replacing torn posts, repainting colored pavement and clearing paths of snow or debris won't break your bank, but they do require time, money and equipment.

As every transportation official knows, “finishing” a road project does not end a city’s financial relationship with it.

Quick-build projects can deliver immediate economic benefits by cheaply changing the way streets work. But low-cost, flexible materials require more frequent maintenance—replacing posts, refreshing paint—so the on-going costs can add up.

Quick-build projects can deliver immediate economic benefits by cheaply changing the way streets work.

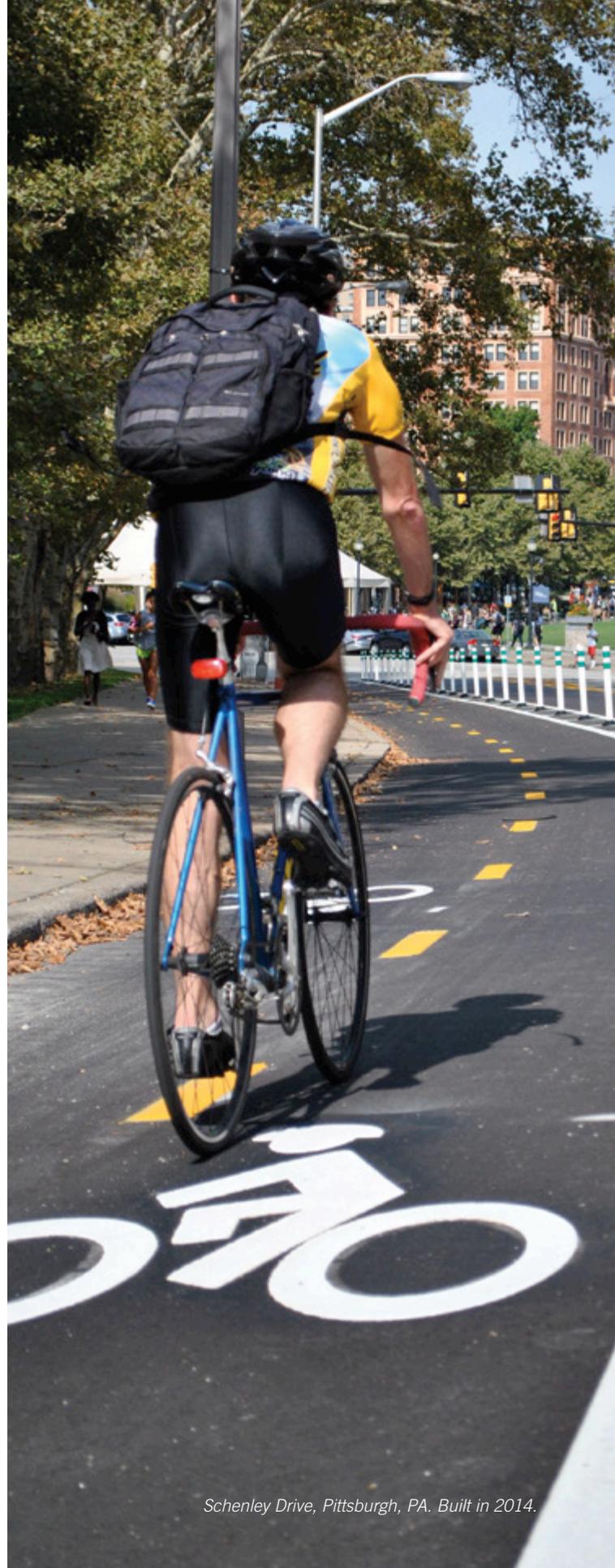
Since beginning its protected bike lane rollout in 2012, Chicago has begun manually removing posts from some streets during snowstorms, to make room for plows. It then reinstalls them in the spring, but uses many fewer posts than it once did.

Denver, another snowy city, is just learning about the maintenance its projects will require.

“Think about all your maintenance vehicles and design to the widths and dimensions of those maintenance vehicles,” advises Dan Raine, a city planner developing the city’s practices for the subject.

In 2014 and 2015, Denver used a Jeep with a front plow to clear its bike lanes. But during larger snowfalls, the Jeep got stuck in the snow multiple times a mile.

In 2016, the city planned to hire a crew specifically to maintain bikeways, and also to buy new equipment specifically for clearing snow from protected bike lanes. Denver also sends crews out during snowstorms



Schenley Drive, Pittsburgh, PA. Built in 2014.



Bluebonnet Lane, Austin, TX. Built in 2012.

to preemptively apply magnesium chloride to shady sections of protected bike lanes. If ice forms, Raine said, “it will last for days until it melts away.”

Other maintenance issues include mountability—by garbage trucks, for example—and durability in traffic. By the end of Denver’s first winter with a protected bike lane, well over half the plastic posts needed replacing.

Austin engineer Nathan Wilkes said the city has begun setting off protected bike lanes with three-inch-tall precast domes, attached to the pavement with epoxy.

Wilkes estimates that the ten-inch-wide concrete domes cost \$20 per unit to manufacture and install, or \$22,000 per lane-mile with five-foot spacing. He hopes they’ll last 10 years or more.

“It’s not quite as tall as we’d like to see; something closer to five inches is where we’re headed,” Wilkes said. “Just from a functional standpoint, five inches is kind of a magic number.” That’s because five inches is the maximum height that can be cleared by fire and sanitation trucks that might need to straddle the bike lane barrier as they head down a street, he said.

For other projects, Austin is using plastic posts, but has upgraded to one of the higher-quality models after seeing the cheapest ones regularly fail within days.

“Not all delineator sticks are created equal,” Wilkes said. “Their highest-durability one, they did field tests at 60 mph and they’re standing straight.”



MEASUREMENT

Objective metrics are an essential part of the process, both for making necessary adjustments and ultimately for demonstrating success.

New York has been a national leader in measuring quick-build projects just as much as it has been in building them.

Since 2007, the city’s department of transportation has conducted intercept surveys to show how many customers get to stores without cars; analyzed sales tax data to show faster-than-average retail growth on redesigned streets; and used taxi travel time data to show that removing auto lanes can actually shorten travel times by reducing lane weaving and other problems. It’s also carefully tracked the number of reductions and injuries before and after quick-build projects, creating an ever-lengthening list of good outcomes.

Few smaller cities have done as thorough a job at data-gathering, but national standards are emerging. The 2015 Separated Bike Lane Planning and Design Guide

from the Federal Highway Administration included two appendices (D and E) with clear recommendations for measuring readership and collision rates in protected bike lanes. All cities say measurement is central to their quick-build work.

“Whatever we put out there we want to observe it and test it and see how it works,” said Wagenschutz.

He recalled one project to add a pedestrian crossing to a stretch of road that had no legal crossings but saw many people crossing anyway. “We put up cameras and had our interns in the office watch hours of footage,” Wagenschutz said. The data, he said, showed that crossing locations became far more predictable when a convenient legal crossing was added.

Seattle gives each project a one-year quantitative evaluation. “We have a whole list of things we look at: collisions, speeds, volumes, travel times,” said Simpson. “I think the one we use the most is collision data—even if it’s just an intersection improvement we look at that.”

In Pittsburgh, project money was so tight that the city couldn’t find any cash of its own to measure whether its highest-profile project, Penn Avenue, was having any effect.

All cities say measurement is central to their quick-build work.

“We were unable to find a line item that would help us purchase counters, but the Pittsburgh Downtown Partnership could,” Saunders said. Thanks to five bike and pedestrian counters bought by the downtown business association for \$17,000, Pittsburgh was able to trumpet a huge increase in bike traffic.

“There are 800 or 1,000 people a day on Penn Avenue in the summertime, so you can’t really not call it a success,” Saunders said. “The people who don’t like it, I don’t really hear them any more.”

ISSUES AND PROBLEMS

DO QUICK BUILD PROJECTS LEAD TO PERMANENT CHANGES?

In theory, yes. But as of 2015, no jurisdiction has created a direct channel to send such projects into capital construction pipelines.

Some quick-build projects are being replaced by full reconstruction projects, but so far this is done on a case-by-case basis. The closest relationship may be in the New York City DOT Public Plaza program, which explicitly allows for the possibility of “temporary materials plazas” being fully built out as a “permanent materials plaza.” The program’s guidelines indicate time frames for the two types of plazas as one and three years, respectively, from application to implementation, and temporary materials plazas as a stage on the way to permanence. NYCDOT’s program guidelines note that “short term plazas can help garner local support for long-term plazas.”

Though not clearly documented yet, quick-build projects can affect the speed of capital project delivery by demonstrating real-world benefits of geometric changes. Several of the flagship public places created along Broadway in midtown Manhattan from 2008 – 2010 entered the capital project pipeline: construction in Times Square began in 2013 and is slated to be complete in spring 2016.

Generally, officials in our example cities indicate clearly that any future capital project on a street that has received a quick-build project will reflect that new geometry. But money remains scarce.

Memphis says it is working to assemble the funding to build out some of its MEMFix projects.

While San Francisco does not draw a clear organizational, definitional or funding line between rapid

implementation and capital projects, it is going in the direction of speeding implementation, especially safety projects, by phasing, with geometry-altering markings and objects being installed as quickly as possible, followed by more extensive construction elements. This approach is practiced by NYCDOT with its Select Bus Service projects, where bus lane markings and operational improvements to speed buses are followed later with curb realignment for enhanced bus stops.

Still in the early stages of its program, Seattle is focused on the rapid installation of the center city bicycle network rather than thinking about long-term construction.

It is safe to say that this is a largely unresolved issue at both practical and strategic levels. Certainly, there is a mismatch between the numbers of quick-build projects being developed and implemented and the scope and speed of city street-oriented capital reconstruction programs to succeed them with more durable materials.

Quick-build projects can affect the speed of capital project delivery by demonstrating real-world benefits of geometric changes.

In some respects, this is part of the broader problem of infrastructure funding in U.S. cities and for the country more generally. The quick-build phenomenon shows the hunger for renewal and transformation of city streets—at least as deep as public enthusiasm for high-budget items like bridges, rail and airports. For cities, rethinking project development

processes to take advantage of the tactical urbanism spectrum is still in progress. Centralized project development offices might help.

Cities may be able to innovate with capital programs involving greater numbers of smaller capital projects, though that is also frequently a multi-agency effort that takes time to craft. There are a variety of ways to prioritize capital replacement of quick-build projects by keeping track of temporary materials’ useful life and scoring capital projects higher where they make accepted changes permanent.

ARE QUICK-BUILD PROJECTS POPULAR?

Cities are making striking progress in remaking streets, but not without extensive public engagement and debate. Nearly all say that the speed of quick-build projects can elicit both concern as well as support.

Where supporters of biking see breakthroughs against a long-frozen status quo, bicycle lane opponents see railroading of an unwelcome agenda. The ability of a city to change details of such projects after implementation only partly alleviates concern about the overall goals.

Programs can generally respond to people with opposing points of view using data that shows beneficial effects and responsive, flexible project development. NYCDOT has at times remarked that its quick-build street programs are constrained less by project resources than by outreach capacity.

A more muted, but abiding, issue is the aesthetics of temporary materials. Not everyone finds colored asphalt and high-visibility plastic delineators attractive elements of city streetscapes. Sometimes opponents cite this as central reasons to oppose a project. Other times it may be a secondary issue. The question was recently raised

by officials from nearby museums regarding a bicycle lane with delineator posts and sections of vibrant green pavement along Schenley Drive in Pittsburgh. Without some innovation in the quick-build project materials palette, especially for protected bicycle lanes, such objections are likely to persist.

But despite debates, problems and the inevitable risks and discomfort of promoting change, the practices described in this report and their institutionalization in city governments are spreading rapidly, and doing so in more than the eight cities' programs profiled here.

Once a few successful quick-build projects are finished, their effects can stretch beyond the newly redesigned streets and into something just as valuable to a great city: the culture of its civil service.

Good quick-build projects are exciting, fulfilling and contagious. "We've become more open to seeing those low-hanging-fruit opportunities," said Austin's Beaudet. "It's kind of like that thing where your dad buys a green Volkswagen and you see green Volkswagens everywhere. We have a bias for seeing those opportunities now."



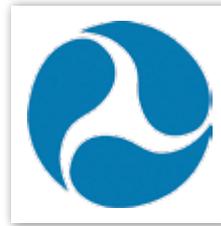
2nd Avenue, Seattle, WA. Photo Credit: Adam Coppola Photography

FURTHER READING: DOCUMENTING NEW URBAN STREET STRATEGIES



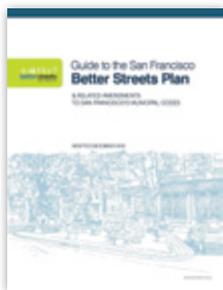
Street Design Manual (2009; updated in 2013) NYC Department of Transportation

Makes the starkest, most definitional distinction between “operational” and capital projects, and contains design and contextual guidance for hallmark project types in the quick-build transportation repertoire: protected bike lanes, public plazas, pedestrian safety islands, sidewalk extensions using paint, epoxied gravel and plastic delineators and the safety-oriented street geometry changes.



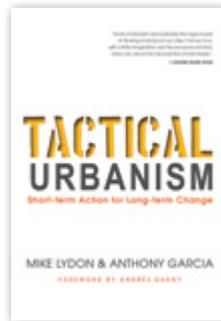
Performance-Based Practical Design (2015) Federal Highway Administration

The philosophy behind quick-build projects in urban areas can also be applied to freeway design. This online collection of principles and case studies explores these concepts in the language of state transportation departments.



Better Streets Plan (2011) San Francisco

Does not directly reference quick-build transportation project techniques, but calls for the types of street geometry changes that are accomplished quickly by their application.



Tactical Urbanism: Short-term Action for Long-term Change (2015)

Mike Lydon and Anthony Garcia, Island Press

The principals of Street Plans Collaborative gave shape and names to the ideas discussed here as part of the “tactical urbanism” movement in planning, architecture and advocacy. Their 2015 book on the subject traces its concepts and practices from ancient Iraq to modern Ohio.



Complete Streets Design Guidelines (2013) Chicago Department of Transportation

Describes institutional responsibilities, street types and decision-making guidance for delivering city streets designed for all potential transportation modes and users. Embeds biking, walking and safety policies and street geometric principles into the project development and local dialogue processes. Does not differentiate between quick-build and capital project decisions, but gives numerous examples of the former.



Design and Materials Guide to Tactical Urbanism (2016, forthcoming)

The Street Plans Collaborative, Knight Foundation

Lays out the methods (process, policy) and materials (type, cost, where to purchase) for quick-build street projects by both volunteers and pros in as much detail as possible, right down to the square foot and linear foot cost for epoxy gravel and traffic tape.



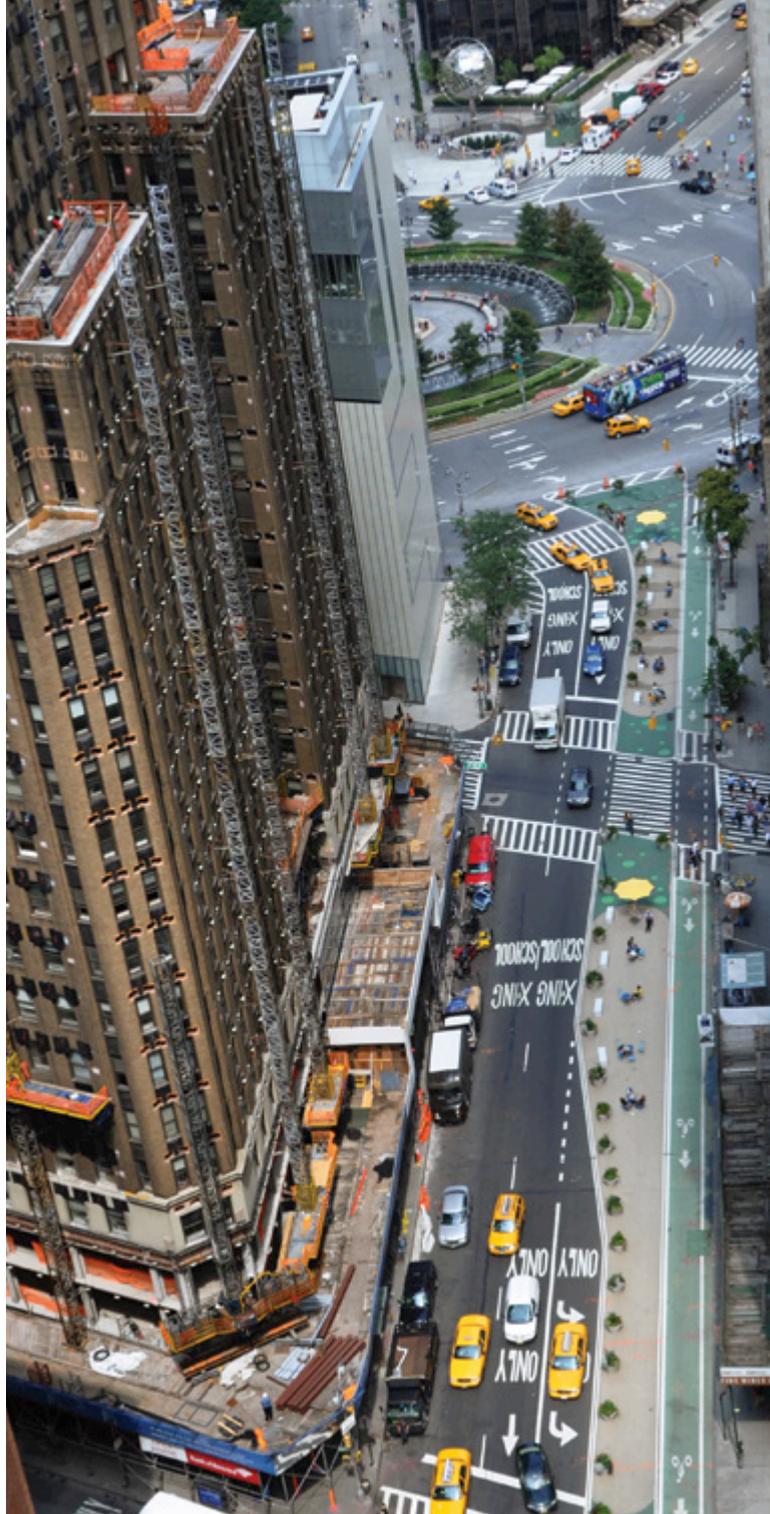
Urban Bikeway Design Guide (2011; updated 2014) **Urban Street Design Guide** (2013) National Association of City Transportation Officials

Made the development of city-specific design documents less essential. The latter work contains special mention of the quick-build approach to changing street geometry. All cities we interviewed cited the NACTO guides as useful resources.



Incorporating On-Road Bicycle Networks into Road Resurfacing Projects (2016)

A Federal Highway Administration guide to taking advantage of the perfect time to make quick-build changes to a street.



Broadway at Columbus Circle, New York City, NY. Built in 2009.



peopleforbikes

GREEN LANE PROJECT

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The Green Lane Project is a program of PeopleForBikes, a movement to unite millions of people to improve bicycling in America. The Project helps cities build better bike lanes to create low-stress networks. We actively support protected bike lanes and work closely with leading U.S. cities to speed the installation of these lanes in their communities and around the country.



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